1985 Campbell River Zooplankton Samples

T. J. Brown, B. A. Kask, C. D. McAllister, M. Kotyk, C. D. Levings, and S. Macdonald

Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

December 1985

Canadian Data Report of Fisheries and Aquatic Sciences No. 572

86-02965/

Canadian Data Report of Fisheries and Aquatic Sciences

These reports provide a medium for filing and archiving data compilations where little or no analysis is included. Such compilations commonly will have been prepared in support of other journal publications or reports. The subject matter of Data Reports reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries management, technology and development, ocean sciences, and aquatic environments relevant to Canada.

Numbers 1-25 in this series were issued as Fisheries and Marine Service Data Records. Numbers 26-160 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Data Reports. The current series name was changed with report number 161.

The correct citation appears above the abstract of each report.

Rapport statistique canadien des sciences halieutiques et aquatiques

Ces rapports servent de base à la compilation des données de classement et d'archives pour lesquelles il y a peu ou point d'analyse. Cette compilation aura d'ordinaire été préparée pour appuyer d'autres publications ou rapports. Les sujets des Rapports statistiques reflètent la vaste gamme des intérêts et politiques du Ministère des Pêches et des Océans, notamment gestion des pêches, techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les numéros 1 à 25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer. Les numéros 26-160 ont été publiés à titre de Rapports statistiques du Service des pêches et de la mer, Ministère des Pêches et de l'Environnement. Le nom de la série a été modifié à partir du numéro 161.

Le titre exact paraît au haut du résumé de chaque rapport.

Canadian Data Report of
Fisheries and Aquatic Sciences No. 572

December 1985

1985 CAMPBELL RIVER ZOOPLANKTON SAMPLES

by

T. J. Brown, B. A. Kask, C. D. McAllister, M. Kotyk, C. D. Levings, and
S. Macdonald

Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

(c) Minister of Supply and Services Canada 1985

Cat. No. Fs 97-13/572E ISSN 0706-6465

Correct citation for this publication:

Brown, T. J., B. A. Kask, C. D. McAllister, M. Kotyk, C. D. Levings, and J. S. Macdonald. 1985. 1985 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. 572: 45 p.

ABSTRACT

Brown, T. J., B. A. Kask, C. D. McAllister, M. Kotyk, C. D. Levings, and J. S. Macdonald. 1986. 1985 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. 572: 45 p.

In 1985, there were 2 estuarine, 2 transition and 1 marine station sampled routinely producing 126 zooplankton samples. These samples have been counted to major taxa and sorted by station and arranged chronologically. The data includes date, time, station number, net type, tide, temperature, salinity, and volume filtered. These data are presented here.

RESUME

Brown, T. J., B. A. Kask, C. D. McAllister, M. Kotyk, C. D. Levings, and J. S. Macdonald. 1985. 1985 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. 472: 45 p.

En 1985, on a prélevé à deux stations estuariennes, à deux stations de transition et à une station marine 126 échantillons de zooplancton. On a dénombré ces échantillons en fonction des principaux taxons, on les a triés par station et on les a mis par ordre chronologique. On présente ici les données sur la date, l'heure, le numéro de la station, le type de filet, la marée, la température, la salinité et le volume d'eau filtré.

LIST OF TABLES

Table			Page
1	-	Trip date	3
2	-	Station nomenclature	4
3	-	Abbreviations	5
4	-	Estuarine macro net - raw counts	6
5	-	Transition macro net - raw counts	9
6	-	Marine macro net - raw counts	12
7	-	Estuarine micro net - raw counts	15
8	-	Transition micro net - raw counts	18
9	-	Marine micro net - raw counts	21
10	-	Estuarine macro net - numbers M^{-3}	24
11	-	Transition macro net - numbers M^{-3}	27
12	-	Marine macro net - numbers M^{-3}	30
13	-	Estuarine micro net - numbers M^{-3}	33
14	-	Transition micro net - numbers M^{-3}	36
15	-	Marine micro net - numbers M^{-3}	39

LIST OF FIGURES

Figure			
1	-	Station locations in Discovery Passage	43
2	-	Station locations in Campbell River Estuary and adjacent waters	45

INTRODUCTION

The data from the 1985 zooplankton samples from the Campbell River estuary and Discovery Passage are reported here. The Campbell River estuary is located on the eastern shore of Vancouver Island at latitude 50°03' north and longitude 125°15' west.

In March of 1982, a study was initiated to assess the impact of the construction of 4 intertidal islands within the estuary on the utilization and distribution of juvenile salmonids. These islands were constructed by British Columbia Forest Products in exchange for a dry land log sort facility (Brownlee et al. 1984). The islands were planted with Juncus arcticus and Carex lyngbyei to augment the marsh input into the estuarine food web.

As a result of the rehabilitative activities in the estuary, a detailed assessment of the biological responses to these changes was undertaken. Studies of the water quality, currents and salt wedge intrusion, vegetation, benthic communities, epibenthic and pelagic plankton communities and salmon utilization were initiated. The pelagic zooplankton surveys have been conducted yearly since 1983 and are reported in Brown and Kask 1984, 1985.

METHODS AND MATERIALS

The zooplankton samples were collected from January 9, 1985 to August 27, 1985 during 12 sampling trips (Table 1). The sampling was carried out in three zones. The estuarine zone was defined as the intertidal area bounded by Tyee Spit. The transition zone included an area of Discovery Passage which is influenced by the Campbell River and the Marine zone included the rest of Discovery Passage.

These were 4 stations sampled on January 9 which weren't sampled on subsequent trips. There were 2 estuarine, 2 transition and 1 marine station routinely sampled in 1985 producing 126 zooplankton samples (Table 2; Fig. 1, 2).

Miller nets were used to sample the zooplankton communities (Miller, 1961). The micro net had mouth diameter of 3.6 cm and a 100 μ net while the macro net had a mouth diameter of 11.3 cm and a 350 μ net. The nets were towed for 10 minutes at approximately 2 MS^{-1}. The volume filtered was calculated using a flow meter and tow duration.

The samples were preserved in 10% formalin with rose bengal. They were counted to major taxonomic group (Table 3) in the lab using an M5 dissecting microscope. When necessary, the sample was split using a Folsom plankton splitter and the results multiplied by the appropriate correction factor to give the total numbers in the sample. One hundred harpacticoids and

calanoids were picked and placed into vials for latter identification to species where possible.

The data have been arranged chronologically and sorted by station, zone and net size producing 6 tables of raw counts (Tables 4-9). The data was then corrected by the volume filtered and presented in numbers M^{-3}. These data are presented in tables 10-15. The data includes date, time (PST), station number, net type (macro or micro net), tide (ebb or flood and height in meters), temperature (°C), salinity (°/₀₀) and volume filtered (M^3).

ACKNOWLEDGMENTS

Thanks are due to R. F. Clarke, S. Milligan, G. Bainbridge, and M. J. Hudson for their assistance in counting the samples. We would like to thank S. Spawn, R. Lauzier, S. Swailes and P. Higgins for their field assistance. A special thanks to P. Neaves for computer assistance with this data.

REFERENCES

Brown, T. J. and B. A. Kask. 1984. 1983 Campbell River Miller net samples. Can. Data Rep. Fish. Aquat. Sci. No. 471: 73 p.

Brown, T. J. and B. A. Kask. 1985. 1984 Campbell River zooplankton samples. Can. Data Rep. Fish. Aquat. Sci. No. 516: 69 p.

Brown, T. J., M. Kotyk, B. A. Kask, C. D. Levings, C. D. McAllister, and J. S. Macdonald. Salmonid catch-data from Campbell River and Discovery Passage, 1985. Can. Data Rep. Fish. Aquat. Sci. (in press).

Brownlee, M. J., E. R. Matice, and C. D. Levings. 1984. The Campbell River estuary: A report on the design, construction and preliminary follow-up study findings of intertidal marsh islands created for purposes of estuarine rehabilitation. Can. MS Rep. Fish. Aquat. Sci. No. 1789: 211 p.

Miller, D. 1961. A modification of the small Hardy Plankton Indicator for simultaneous high speed plankton hauls. Bull. Mar. Ecol. Vol. V, No. 45, p. 165-172.

Table 1 - Trip dates

Trip number*	Date
1	Jan. 8 - 9
2	Mar. 26 - 28
3	Apr. 9 - 12
5	May 7 - 10
6	May 21 - 24
7	Jun. 4 - 6
8	Jun. 18 - 20
9	Jul. 2 - 4
10	Jul. 16 - 18
11	Jul. 29 - 31
12	Aug. 13 - 15
13	Aug. 27 - 29

*From Brown et al. in press

Table 2. Station nomenclature*.

Station number	
Estuarine	
1	- Mother Ramp sampled at 0-1M
7	- North Baikie Mouth sampled at 0-1M
15	- Island 3 sampled at 0-1M
371	- Log Sort sampled at 0-1M
372	- Log Sort sampled at 3-4M
Transition	
20	- Boat Ramp sampled at 0-1M
21	- McDonalds sampled at 0-1M
34	- Painters Channel sampled at 0-1M
Marine	
27	- Outer Gowlland sampled at 0-1M

*From Brown et al. (in press)

Table 3. Abbreviations.

ACAR	Acarinans
AMP	Amphipods
B. CYP	Barnacle cypris
BIVALV	Bivalves
B. NAUP	Barnacle nauplii
CAL	Calanoid copepods
CHAET	Chaetognaths
CHITN	Chitons
CLAD	Cladocerans
C. NAUP	Copepod nauplii
CUMA	Cumaceans
DECA	Decapods
D. ZOE	Decapod zoea
ECTO	Ectoprocts
EGG	Unidentified eggs
E. LAR	Echinoderm larvae
EUP	Euphausids
FISH	Fish
GAST	Gastropods
G. EGG	Gastropod eggs
HARP	Harpacticoid copepods
HYDRA	Hydroids
I. LAR	Insect larvae
INSCT	Insects
ISOPO	Isopods
MEDUS	Medusae
MYSID	Mysids
NEMA	Nematodes
OST	Ostracods
P. COP	Parasitic Copepods
POLY	Polychaetes
SAL	Salinity ($^{o}/_{oo}$)
SIPH	Siphonophores
STN	Station number
STYPE	Sample type (Macro or Micro net)
TANAD	Tanaidaceans
TEMP	Temperature (°C)
TENA	Ctenophores
TUNI	Tunicates
WORM	Worms
VOL	Volume filtered (M^3)

Table 4. Estuarine macro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1453	1	MAC	F3.9	3.3	3.7	8.50	0	0	0	8	0	0	0	0	0	6	0	0	0
850109	1337	7	MAC	F3.7	3.2	1.4	6.93	1	0	0	0	0	0	0	0	0	4	0	0	0
850327	902	7	MAC	E3.4	3.7	1.4	7.40	1	0	0	2	0	0	0	3	0	2	2	0	0
850409	1735	7	MAC	F1.9	7.3	1.0	7.88	3	0	0	39	1	2	0	2	0	22	2	23	0
850508	835	7	MAC	E2.9	8.5	3.0	7.99	1	1	0	10	0	0	0	1	0	1	0	3	0
850522	745	7	MAC	E2.4	10.0	4.0	8.14	0	0	0	4	0	0	0	0	0	1	0	5	0
850604	1618	7	MAC	F2.7	12.0	0.6	6.13	0	0	0	2	0	1	0	0	0	0	0	4	0
850618	1555	7	MAC	F2.8	14.7	0.5	10.58	1	0	0	1	0	0	0	0	0	0	0	0	0
850702	1517	7	MAC	F2.5	15.7	0.8	8.00	2	0	2	15	0	0	0	25	0	8	0	4	7
850716	1516	7	MAC	F2.9	16.1	0.2	11.08	5	0	2	20	1	0	0	1	0	2	0	1	0
850730	1520	7	MAC	F3.6	16.6	1.4	9.70	0	19	1	49	0	0	0	3	1	0	1	7	4
850813	1330	7	MAC	F2.7	16.9	0.8	9.23	0	6	0	6	0	1	0	0	2	2	0	0	0
850828	1453	7	MAC	F3.8	16.3	3.2	4.36	3	0	3	1	0	0	1	0	0	2	0	0	9
850109	1355	15	MAC	F3.8	3.4	2.7	8.30	0	0	0	7	0	0	0	0	0	4	0	0	0
850327	917	15	MAC	E3.3	4.3	3.9	8.41	12	1	0	163	0	5	0	0	4	38	5	0	204
850409	1801	15	MAC	F2.2	8.4	1.2	8.51	2	0	0	177	0	1	0	0	0	19	3	48	19
850508	854	15	MAC	E2.8	8.3	7.1	7.98	31	7	0	219	0	0	0	0	3	23	0	76	4
850522	730	15	MAC	E2.5	10.0	6.0	7.98	2	2	0	28	0	0	0	0	0	2	0	31	0
850604	1605	15	MAC	F2.6	12.5	1.9	9.10	1	0	0	13	0	1	0	0	0	9	0	10	0
850618	1540	15	MAC	F2.6	15.0	0.8	9.47	3	1	0	27	0	0	0	0	0	8	0	3	0
850702	1630	15	MAC	F3.3	-	-	9.93	8	0	0	740	0	0	0	40	0	24	4	0	124
850716	1601	15	MAC	F3.2	16.3	1.3	10.98	1	0	0	2	0	0	0	1	0	0	0	0	1
850729	1500	15	MAC	F3.4	15.5	4.3	8.20	1	44	16	1161	0	0	0	66	65	10	13	25	90
850813	1420	15	MAC	F3.1	16.2	1.3	9.13	0	0	0	8	0	0	1	1	0	0	0	1	0
850827	1920	15	MAC	E3.4	15.0	5.2	4.18	9	3	1	242	5	1	0	79	325	7	16	4	455
850109	1420	371	MAC	F3.8	3.2	3.0	8.80	0	0	0	2	0	0	0	0	0	5	0	0	0
850109	1433	372	MAC	F3.8	7.3	30.8	7.20	2	0	0	72	0	0	1	1	0	6	4	0	0

G.EGG	CLAD	ISOPO	I.LAR	CHAET	EUP	CUMA	D.ZOE	FISH	POLY	E.LAR	MEDUS	B.CYP	TENA	SIPH	TANAD
0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
0	1	1	0	0	0	0	0	9	0	0	0	0	0	0	0
3	0	12	6	0	3	0	4	4	0	1	0	9	0	0	0
2	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0
1	0	0	0	0	10	0	1	0	0	0	0	0	0	0	0
15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	1	0	9	0	6	0	0	0	0	0	0	0	0
13	0	0	1	0	3	0	1	0	0	0	0	0	0	0	2
25	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0
1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
21	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	9	2	0	17	5	133	5	0	0	1	70	0	0	0
16	1	1	4	0	75	0	18	2	10	1	1	7	0	0	0
51	0	4	5	0	0	0	0	2	0	1	2	0	0	0	0
2	1	0	0	0	3	0	1	1	0	0	0	0	0	0	0
21	9	0	0	0	0	0	2	0	1	0	0	1	0	0	0
5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	12	0	4	0	472	0	24	0	0	0	4	4	0	0	0
5	2	0	1	0	0	0	0	0	0	0	0	1	0	0	1
381	85	0	0	0	184	0	80	0	2	0	46	0	0	3	0
1	4	0	0	0	1	0	1	1	0	0	0	0	0	0	0
147	38	0	0	3	303	0	24	1	7	0	29	5	6	7	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0

Table 5. Transition macro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1626	20	MAC	F4.1	7.5	31.5	7.72	3	0	0	108	1	24	0	0	2	6	38	0	0
850327	1445	20	MAC	E1.5	7.5	32.3	6.20	4	32	0	876	0	8	0	56	28	8	28	48	320
850409	1357	20	MAC	E0.8	8.3	32.2	11.00	4	4	0	1380	0	4	4	128	12	0	20	328	28
850508	1010	20	MAC	E2.1	8.8	32.0	7.98	40	8	0	620	0	32	0	384	20	12	32	400	12
850522	859	20	MAC	E1.9	9.0	29.5	8.65	5	0	0	440	0	51	0	17	1	6	16	157	7
850604	1543	20	MAC	F2.2	10.8	29.3	8.46	24	0	0	764	0	72	0	8	4	24	20	40	68
850618	1415	20	MAC	F2.0	9.9	29.7	6.98	24	0	12	1100	0	88	0	8	0	32	0	8	0
850702	1430	20	MAC	F2.0	13.0	28.8	9.65	84	28	4	912	0	48	0	1052	0	108	0	12	184
850716	1356	20	MAC	F2.2	11.9	29.9	11.36	15	2	4	121	0	0	0	1	0	4	0	2	2
850729	1935	20	MAC	E3.9	10.5	32.3	8.66	5	7	0	146	0	3	0	501	20	7	2	91	22
850813	1530	20	MAC	F3.7	12.0	32.0	10.98	0	0	0	129	0	2	0	7	1	4	6	37	0
850827	1858	20	MAC	E3.5	10.1	31.8	4.73	24	48	0	160	0	0	0	740	52	16	12	8	104
850327	1150	21	MAC	E2.5	7.5	32.5	8.10	4	21	0	618	0	11	0	18	11	1	11	23	329
850409	1417	21	MAC	E0.7	9.6	32.1	9.61	6	12	0	524	0	24	0	30	6	6	46	168	8
850508	940	21	MAC	E2.4	8.9	32.2	6.24	250	4	0	544	0	3	0	188	8	6	42	140	15
850522	835	21	MAC	E2.1	5.0	32.0	8.01	25	0	0	278	0	16	0	6	1	3	16	93	8
850604	1517	21	MAC	F1.9	12.7	29.4	8.39	24	2	0	90	0	2	0	16	0	28	4	92	12
850618	1323	21	MAC	F1.5	12.2	28.6	5.98	7	0	1	32	0	1	1	9	0	4	1	9	0
850702	1337	21	MAC	F1.4	13.2	29.7	10.19	8	2	0	29	0	1	0	58	2	5	2	41	16
850716	1308	21	MAC	F1.8	12.6	30.0	8.61	25	0	1	19	0	0	0	28	0	8	2	23	2
850729	1910	21	MAC	E4.0	11.1	31.9	7.90	17	16	14	308	0	1	0	57	54	9	7	107	65
850814	830	21	MAC	E1.1	10.1	31.5	9.73	30	5	4	7	0	0	0	30	11	1	0	177	2
850827	1838	21	MAC	E3.5	10.5	31.6	3.50	192	1180	4	208	4	0	4	64	20	20	12	4	100
850109	1601	34	MAC	F4.0	3.7	5.3	8.64	1	0	0	252	0	49	0	0	2	12	74	0	0

G.EGG	MYSID	CLAD	ISOPO	I.LAR	BVALV	CHAET	EUP	CUMA	D.ZOE	FISH	P.COP	POLY	E.LAR	MEDUS	DECA	B.CYP	TENA	SIPH	HYDRA	CHITN
2	0	0	0	1	1	0	0	6	0	0	0	2	0	2	0	0	0	11	0	0
12	0	0	0	0	0	0	120	0	260	4	0	4	4	32	0	28	0	16	0	0
16	0	0	0	0	0	0	140	0	216	8	0	0	96	12	0	36	0	12	4	0
88	0	0	0	0	0	4	112	0	36	4	0	4	28	16	0	0	0	12	8	0
99	0	0	0	0	0	1	2	0	64	0	0	2	0	9	0	0	0	3	3	0
92	0	0	0	0	0	4	68	0	136	0	0	4	0	4	0	0	0	8	1	0
40	0	0	0	0	0	0	0	0	36	0	1	0	0	8	0	0	0	0	0	0
140	0	64	4	0	0	4	452	0	60	0	0	0	0	4	0	0	0	4	0	0
112	0	0	0	0	0	0	4	0	17	0	1	0	0	0	0	1	0	0	0	0
1507	0	7	0	0	0	0	16	0	15	0	0	5	3	12	0	1	0	4	0	0
95	0	1	0	0	0	0	0	0	17	0	0	2	2	7	1	0	11	3	0	0
1836	0	12	0	0	0	0	88	0	12	0	0	0	8	16	0	0	0	28	8	0
18	0	5	0	0	0	0	0	0	131	4	0	1	7	6	0	48	0	1	0	0
18	0	0	0	0	0	0	46	0	56	4	0	2	36	26	0	36	0	0	1	0
92	3	0	2	0	0	4	115	0	29	0	0	0	3	16	3	0	0	1	0	0
99	0	0	0	0	0	1	3	0	32	0	0	0	0	2	0	0	0	2	1	0
264	0	0	0	6	0	0	16	0	52	0	0	0	0	10	0	0	0	2	0	0
191	0	0	0	0	0	0	0	1	14	0	0	2	0	2	7	5	0	0	0	0
337	0	45	0	0	0	0	16	0	26	0	0	0	1	6	0	0	0	0	0	0
502	0	0	0	1	0	0	2	0	22	0	1	0	0	10	0	1	0	0	0	0
5582	0	13	0	0	0	0	32	2	45	0	1	4	3	16	0	1	0	1	0	0
615	0	0	0	0	0	0	0	0	5	0	0	1	6	7	0	0	1	0	0	0
2920	0	8	4	0	0	0	124	0	12	0	0	4	4	8	0	8	0	12	0	4
1	0	0	0	0	0	1	0	154	1	0	0	3	0	16	2	0	0	10	0	0

Table 6. Marine macro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	OST	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1533	27	MAC	F3.9	7.6	31.9	9.08	0	0	0	157	20	0	1	3	41	1	0
850327	1031	27	MAC	E2.9	7.5	32.0	10.82	4	32	4	2960	40	100	16	24	32	12	624
850409	1335	27	MAC	E1.0	9.2	32.1	11.93	0	8	0	1744	12	152	8	0	80	128	48
850508	1037	27	MAC	E2.0	8.8	32.1	8.51	0	20	0	2296	56	888	28	16	72	464	8
850522	805	27	MAC	E2.3	6.0	25.5	7.37	0	2	0	942	32	24	4	2	24	64	12
850604	1455	27	MAC	F1.6	11.1	30.6	7.92	1	0	0	80	7	2	0	42	42	8	10
850618	1245	27	MAC	F0.7	10.0	29.9	8.27	0	0	0	346	9	157	0	25	0	4	0
850702	1314	27	MAC	F1.2	11.5	29.9	11.00	4	28	0	976	0	1368	8	60	4	4	20
850716	1219	27	MAC	F1.5	10.8	31.0	8.22	2	5	1	223	0	67	1	13	2	10	29
850729	1844	27	MAC	E4.0	10.4	32.8	8.06	6	23	0	1201	14	597	48	23	8	12	57
850814	945	27	MAC	E0.7	11.0	27.0	9.21	4	1	0	37	2	63	2	5	0	51	6
850827	1810	27	MAC	E3.6	10.3	32.2	4.74	1	0	0	271	1	341	17	17	3	1	22

G.EGG	CLAD	BVALV	CHAET	EUP	CUMA	D.ZOE	FISH	POLY	E.LAR	MEDUS	DECA	B.CYP	TENA	SIPH	HYDRA
0	0	0	3	0	0	1	2	0	1	6	0	0	0	12	0
20	0	0	0	492	0	548	16	4	0	0	24	36	0	4	4
0	0	0	4	404	4	140	4	8	92	16	0	44	0	8	4
8	0	0	16	524	0	316	12	4	4	4	4	0	0	12	0
16	0	0	2	18	0	88	0	6	0	2	0	0	0	2	2
6	0	0	6	8	0	295	2	11	13	5	0	0	0	2	0
34	0	0	0	1	0	42	0	3	1	6	14	1	0	6	2
32	20	0	0	260	0	124	0	0	0	4	0	0	0	0	0
142	8	1	0	13	0	75	0	0	0	18	0	0	0	3	0
79	5	0	1	111	0	68	0	6	0	35	1	0	0	8	1
113	1	0	0	1	0	15	0	0	2	6	1	0	9	15	0
22	1	0	0	134	0	15	0	1	0	6	0	1	1	6	0

Table 7. Estuarine micro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1453	1	MIC	F3.9	3.3	3.7	0.85	6	40	0	9	0	0	0	2	0	0	0	0	0
850109	1337	7	MIC	F3.7	3.2	1.4	0.69	20	50	0	13	0	0	1	2	0	0	2	9	0
850327	902	7	MIC	E3.4	3.7	1.4	0.74	12	17	0	10	0	0	0	1	0	0	0	12	0
850409	1735	7	MIC	F1.9	7.3	1.0	0.79	4	77	0	86	0	8	0	51	2	0	0	3	0
850508	835	7	MIC	E2.9	8.5	3.0	0.80	0	20	0	10	0	0	1	15	0	0	0	0	0
850522	745	7	MIC	E2.4	10.0	4.0	0.81	4	29	0	10	0	0	0	0	0	0	0	1	2
850604	1618	7	MIC	F2.7	12.0	0.6	0.61	4	107	0	32	0	0	0	6	0	0	0	0	9
850618	1555	7	MIC	F2.8	14.7	0.5	1.06	8	35	1	16	0	0	0	2	0	2	0	1	2
850702	1517	7	MIC	F2.5	15.7	0.8	0.80	18	99	5	76	0	0	0	6	0	1	0	0	9
850716	1516	7	MIC	F2.9	16.1	0.2	1.11	5	13	0	3	0	0	0	4	0	1	1	1	5
850730	1520	7	MIC	F3.6	16.6	1.4	0.97	9	62	3	36	0	0	0	4	0	0	1	2	11
850813	1330	7	MIC	F2.7	16.9	0.8	0.92	10	14	8	3	0	0	0	0	1	1	0	1	6
850828	1453	7	MIC	F3.8	16.3	3.2	0.44	19	58	8	9	0	0	1	2	0	0	2	1	8
850109	1355	15	MIC	F3.8	3.4	2.7	0.83	11	48	0	28	1	0	0	4	0	0	0	9	0
850327	917	15	MIC	E3.3	4.3	3.9	0.84	5	153	0	46	0	0	0	284	28	4	0	4	25
850409	1801	15	MIC	F2.2	8.4	1.2	0.85	6	55	0	61	0	1	0	29	0	1	1	12	8
850508	854	15	MIC	E2.8	8.3	7.1	0.80	23	82	0	117	0	0	0	28	2	2	0	7	2
850522	730	15	MIC	E2.5	10.0	6.0	0.80	7	42	0	18	0	5	0	49	0	1	6	12	2
850604	1605	15	MIC	F2.6	12.5	1.9	0.91	16	460	0	180	0	4	0	44	16	4	0	4	108
850618	1540	15	MIC	F2.6	15.0	0.8	0.95	8	41	8	34	0	5	0	11	0	17	1	3	12
850702	1630	15	MIC	F3.3	-	-	0.99	8	2072	0	1696	0	4	0	84	8	0	112	148	288
850716	1601	15	MIC	F3.2	16.3	1.3	1.10	2	36	4	22	0	0	0	0	1	0	0	1	3
850729	1500	15	MIC	F3.4	15.5	4.3	0.82	28	788	24	540	0	0	4	12	36	0	16	80	100
850813	1420	15	MIC	F3.1	16.2	1.3	0.91	2	63	6	56	0	2	1	1	0	0	0	10	79
850827	1920	15	MIC	E3.4	15.0	5.2	0.42	31	546	0	340	9	1	1	70	81	0	27	12	109
850109	1420	371	MIC	F3.8	3.2	3.0	0.88	2	23	0	8	0	0	0	0	0	1	0	5	0
850109	1433	372	MIC	F3.8	7.3	30.8	0.72	21	125	0	341	0	0	0	14	5	0	7	13	0

G.EGG	CLAD	ISOPO	I.LAR	BVALV	CHAET	EUP	D.ZOE	POLY	E.LAR	DECA	B.CYP	INSCT
0	1	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	2	0	0	0	0	0	0	0	11	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	1	0	1	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
0	19	0	0	0	0	0	0	0	0	0	0	0
0	53	0	0	0	0	0	0	1	1	0	0	0
1	3	0	0	0	0	0	0	0	0	0	0	0
1	45	0	0	0	0	0	0	0	0	0	0	0
0	5	0	1	0	0	0	0	1	0	0	0	0
4	10	0	0	2	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0	1	4	0	1	0
2	0	0	0	0	0	1	2	0	0	0	2	0
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	8	0	0	0	1	0	0
0	8	0	0	0	0	4	0	0	0	0	0	0
0	11	0	0	0	0	0	0	0	1	0	0	0
4	80	0	0	0	0	8	4	8	0	0	0	0
0	8	0	0	0	0	0	0	0	0	0	0	0
8	40	0	0	28	0	0	0	8	0	0	0	0
0	12	0	0	0	0	0	0	0	0	0	0	0
29	7	3	0	14	1	4	0	18	0	0	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Table 8. Transition micro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1626	20	MIC	F4.1	7.5	31.5	0.77	46	54	0	513	1	7	0	16	1	0	14	243	0
850327	1445	20	MIC	E1.5	7.5	32.3	0.62	20	820	0	556	0	0	0	1784	176	0	4	44	444
850409	1357	20	MIC	E0.8	8.3	32.2	1.10	12	1160	0	872	8	4	0	4452	52	0	44	96	400
850508	1010	20	MIC	E2.1	8.8	32.0	0.80	20	1040	0	608	8	4	4	2140	108	0	24	52	612
850522	859	20	MIC	E1.9	9.0	29.5	0.87	28	608	0	406	0	4	0	948	44	0	4	44	744
850604	1543	20	MIC	F2.2	10.8	29.3	0.85	72	2360	0	1832	0	0	0	1400	288	8	32	48	536
850618	1415	20	MIC	F2.0	9.9	29.7	0.70	56	496	8	622	0	16	0	588	36	8	8	16	148
850702	1430	20	MIC	F2.0	13.0	28.8	0.97	176	4104	8	4880	0	0	0	632	224	8	264	288	464
850716	1356	20	MIC	F2.2	11.9	29.9	1.14	16	233	2	643	0	2	2	10	0	0	15	23	61
850729	1935	20	MIC	E3.9	10.5	32.2	0.87	116	4232	32	2436	16	0	8	720	1344	8	192	192	376
850813	1530	20	MIC	F3.7	12.0	32.0	1.10	28	784	8	1132	4	0	0	56	212	8	72	184	356
850827	1858	20	MIC	E3.5	10.1	31.8	0.47	68	1180	8	740	8	0	0	424	380	4	108	24	140
850327	1150	21	MIC	E2.5	7.5	32.5	0.81	32	1156	0	472	4	4	0	2476	216	4	12	40	1996
850409	1417	21	MIC	E0.7	9.6	32.1	0.96	28	384	0	420	0	0	0	2628	12	0	16	80	376
850508	940	21	MIC	E2.4	8.9	32.2	0.62	68	796	0	408	0	0	0	2320	72	0	32	44	372
850522	835	21	MIC	E2.1	5.0	32.0	0.80	29	126	0	81	0	1	0	288	9	3	7	4	88
850604	1517	21	MIC	F1.9	12.7	29.4	0.84	104	1336	0	620	4	16	0	860	456	0	8	32	300
850618	1323	21	MIC	F1.5	12.2	28.6	0.60	76	310	2	164	0	0	0	590	6	16	8	4	52
850702	1337	21	MIC	F1.4	13.2	29.7	1.02	120	3792	8	3312	16	0	0	472	200	0	144	256	160
850716	1308	21	MIC	F1.8	12.6	30.0	0.86	123	672	4	587	0	4	0	48	43	2	207	48	276
850729	1910	21	MIC	E4.0	11.1	31.9	0.79	80	4088	20	2176	0	0	0	160	1428	0	0	96	212
850814	830	21	MIC	E1.1	10.1	31.5	0.97	128	1936	0	1392	0	0	0	80	336	0	112	152	96
850827	1838	21	MIC	E3.5	10.5	31.6	0.35	196	1976	12	1776	20	0	0	380	664	0	188	68	388
850109	1601	34	MIC	F4.0	3.7	5.3	0.86	15	85	0	384	0	0	0	4	0	1	1	134	0

G.EGG	CLAD	ISOPO	I.LAR	BVALV	CHAET	EUP	CUMA	D.ZOE	POLY	E.LAR	MEDUS	B.CYP	SIPH	HYDRA
2	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4	0	0	0	0	0	4	0	24	16	72	8	8	4	1
0	0	0	0	0	0	0	0	0	8	52	0	72	0	0
8	0	0	0	0	0	0	0	0	16	56	4	0	0	0
8	0	0	0	0	0	0	0	8	0	16	8	0	4	0
24	8	0	16	0	0	8	0	8	0	16	0	8	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	8	0	0	0	8	120	0	8	8	32	0	0	0	0
16	1	0	0	8	0	0	0	7	1	0	1	0	0	0
432	16	0	0	136	0	0	0	0	56	40	24	8	0	0
28	0	0	0	40	0	0	0	0	28	20	0	0	1	0
112	16	4	0	48	0	4	0	0	32	12	16	4	0	0
4	0	0	0	0	4	36	0	12	0	68	4	12	0	0
4	0	0	0	0	0	12	0	0	4	32	4	32	0	0
16	0	0	0	0	0	12	0	4	0	0	8	0	0	0
6	0	0	0	0	0	1	0	0	0	2	0	0	0	0
32	0	0	0	0	4	8	0	0	0	0	0	8	0	0
16	0	0	0	0	0	0	0	0	2	0	0	10	0	0
56	24	0	0	0	0	0	0	8	8	208	0	0	0	0
61	0	0	0	12	0	0	0	0	6	0	0	0	0	0
384	8	4	0	0	0	0	0	0	200	36	0	0	0	0
104	0	0	0	64	0	0	0	0	32	0	0	8	0	0
284	12	28	0	56	0	8	0	8	156	28	0	4	0	0
1	1	0	0	0	0	0	4	0	0	0	0	0	0	0

Table 9. Marine micro net - raw counts.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1533	27	MIC	F3.9	7.6	31.9	0.91	11	167	0	987	0	9	0	19	1	0	11	267	0
850327	1031	27	MIC	E2.9	7.5	32.0	1.08	104	1448	0	1056	8	36	4	2632	120	0	40	72	264
850409	1335	27	MIC	E1.0	9.2	32.1	1.19	16	816	0	1024	0	12	0	2316	24	0	24	44	80
850508	1037	27	MIC	E2.0	8.8	32.1	0.85	0	2600	0	1720	16	8	0	4392	240	80	24	128	296
850522	805	27	MIC	E2.3	6.0	25.5	0.74	8	712	0	424	0	0	0	640	12	0	16	8	228
850604	1455	27	MIC	F1.6	11.1	30.6	0.79	24	4448	0	1704	8	0	0	1008	304	0	0	40	152
850618	1245	27	MIC	F0.7	10.0	29.9	0.83	24	948	0	892	0	4	0	1024	0	8	32	4	112
850702	1314	27	MIC	F1.2	11.5	29.9	1.10	40	4328	8	7296	0	8	0	1144	176	8	128	352	184
850716	1219	27	MIC	F1.5	10.8	31.0	0.82	16	2900	0	2956	0	0	4	92	252	0	200	24	276
850729	1844	27	MIC	E4.0	10.4	32.8	0.81	56	5784	16	3760	16	0	0	456	1936	0	0	88	122
850814	945	27	MIC	E0.7	11.0	27.0	0.92	96	2024	0	2656	4	0	0	28	120	4	60	224	332
850827	1810	27	MIC	E3.6	10.3	32.2	0.47	7	614	3	565	2	0	1	53	229	0	8	13	42

G.EGG	CLAD	BVALV	CHAET	EUP	D.ZOE	FISH	POLY	E.LAR	MEDUS	B.CYP	SIPH
0	0	0	0	0	0	1	1	0	0	0	1
0	0	0	0	60	48	0	28	12	0	12	0
0	0	0	0	48	8	0	8	64	4	284	4
0	0	0	8	72	16	0	0	24	0	0	8
0	0	0	0	0	0	0	4	0	0	0	0
8	0	0	1	0	8	0	0	16	8	0	0
12	0	0	1	0	4	0	1	0	0	0	2
16	8	0	0	80	16	0	16	56	0	0	0
36	24	40	0	0	4	0	32	0	4	0	0
32	0	64	8	32	8	0	120	32	56	0	0
32	0	44	0	0	0	0	32	20	8	0	0
1	1	0	0	25	2	0	18	2	2	0	0

Table 10. Estuarine macro net - numbers M^{-3}

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAU	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1453	1	MAC	F3.9	3.3	3.7	8.50	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
850109	1337	7	MAC	F3.7	3.2	1.4	6.93	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
850327	902	7	MAC	E3.4	3.7	1.4	7.40	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.3	0.3	0.0	0.0
850409	1735	7	MAC	F1.9	7.3	1.0	7.88	0.4	0.0	0.0	4.9	0.1	0.3	0.0	0.3	0.0	2.8	0.3	2.9	0.0
850508	835	7	MAC	E2.9	8.5	3.0	7.99	0.1	0.1	0.0	1.3	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.4	0.0
850522	745	7	MAC	E2.4	10.0	4.0	8.14	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6	0.0
850604	1618	7	MAC	F2.7	12.0	0.6	6.13	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0
850618	1555	7	MAC	F2.8	14.7	0.5	10.58	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
850702	1517	7	MAC	F2.5	15.7	0.8	8.00	0.3	0.0	0.3	1.9	0.0	0.0	0.0	3.1	0.0	1.0	0.0	0.5	0.9
850716	1516	7	MAC	F2.9	16.1	0.2	11.08	0.5	0.0	0.2	1.8	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.0
850730	1520	7	MAC	F3.6	16.6	1.4	9.70	0.0	2.0	0.1	5.1	0.0	0.0	0.0	0.3	0.1	0.0	0.1	0.7	0.4
850813	1330	7	MAC	F2.7	16.9	0.8	9.23	0.0	0.7	0.0	0.7	0.0	0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.0
850828	1453	7	MAC	F3.8	16.3	3.2	4.36	0.7	0.0	0.7	0.2	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0	2.1
850109	1355	15	MAC	F3.8	3.4	2.7	8.30	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
850327	917	15	MAC	E3.3	4.3	3.9	8.41	1.4	0.1	0.0	19.4	0.0	0.6	0.0	0.0	0.5	4.5	0.6	0.0	24.3
850409	1801	15	MAC	F2.2	8.4	1.2	8.51	0.2	0.0	0.0	20.8	0.0	0.1	0.0	0.0	0.0	2.2	0.4	5.6	2.2
850508	854	15	MAC	E2.8	8.3	7.1	7.98	3.9	0.9	0.0	27.4	0.0	0.0	0.0	0.0	0.4	2.9	0.0	9.5	0.5
850522	730	15	MAC	E2.5	10.0	6.0	7.98	0.3	0.3	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0	3.9	0.0
850604	1605	15	MAC	F2.6	12.5	1.9	9.10	0.1	0.0	0.0	1.4	0.0	0.1	0.0	0.0	0.0	1.0	0.0	1.1	0.0
850618	1540	15	MAC	F2.6	15.0	0.8	9.47	0.3	0.1	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.3	0.0
850702	1630	15	MAC	F3.3	-	-	9.93	0.8	0.0	0.0	74.5	0.0	0.0	0.0	4.0	0.0	2.4	0.4	0.0	12.5
850716	1601	15	MAC	F3.2	16.3	1.3	10.98	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
850729	1500	15	MAC	F3.4	15.5	4.3	8.20	0.1	5.4	2.0	141.6	0.0	0.0	0.0	8.0	7.9	1.2	1.6	3.0	11.0
850813	1420	15	MAC	F3.1	16.2	1.3	9.13	0.0	0.0	0.0	0.9	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0
850827	1920	15	MAC	E3.4	15.0	5.2	4.18	2.2	0.7	0.2	57.9	1.2	0.2	0.0	18.9	77.8	1.7	3.8	1.0	108.9
850109	1420	371	MAC	F3.8	3.2	3.0	8.80	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
850109	1433	372	MAC	F3.8	7.3	30.8	7.20	0.3	0.0	0.0	10.0	0.0	0.0	0.1	0.1	0.0	0.8	0.6	0.0	0.0

G.EG	CLAD	ISOP	I.LA	CHAE	EUP	CUMA	D.ZO	FISH	POLY	E.LA	MEDU	B.CY	TENA	SIPH	TANA
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.4	0.0	1.5	0.8	0.0	0.4	0.0	0.5	0.5	0.0	0.1	0.0	1.1	0.0	0.0	0.0
0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0
0.1	0.0	0.0	0.0	0.0	1.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.4	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.9	0.0	0.0	0.1	0.0	1.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.2	0.0	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.8	0.7	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.1	0.2	0.0	2.0	0.6	15.8	0.6	0.0	0.0	0.1	8.3	0.0	0.0	0.0
1.9	0.1	0.1	0.5	0.0	8.8	0.0	2.1	0.2	1.2	0.1	0.1	0.8	0.0	0.0	0.0
6.4	0.0	0.5	0.6	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.3	0.0	0.0	0.0	0.0
0.3	0.1	0.0	0.0	0.0	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.3	1.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.9	1.2	0.0	0.4	0.0	47.5	0.0	2.4	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0
0.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
46.5	10.4	0.0	0.0	0.0	22.4	0.0	9.8	0.0	0.2	0.0	5.6	0.0	0.0	0.4	0.0
0.1	0.4	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35.2	9.1	0.0	0.0	0.7	72.5	0.0	5.7	0.2	1.7	0.0	6.9	1.2	1.4	1.7	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Table 11. Transition macro net - numbers M^{-3} .

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAU
850109	1626	20	MAC	F4.1	7.5	31.5	7.72	0.4	0.0	0.0	14.0	0.1	3.1	0.0	0.0	0.3	0.8	4.9	0.0	0.0
850327	1445	20	MAC	E1.5	7.5	32.3	6.20	0.6	5.2	0.0	141.3	0.0	1.3	0.0	9.0	4.5	1.3	4.5	7.7	51.6
850409	1357	20	MAC	E0.8	8.3	32.2	11.00	0.4	0.4	0.0	125.5	0.0	0.4	0.4	11.6	1.1	0.0	1.8	29.8	2.5
850508	1010	20	MAC	E2.1	8.8	32.0	7.98	5.0	1.0	0.0	77.7	0.0	4.0	0.0	48.1	2.5	1.5	4.0	50.1	1.5
850522	859	20	MAC	E1.9	9.0	29.5	8.65	0.6	0.0	0.0	50.9	0.0	5.9	0.0	2.0	0.1	0.7	1.8	18.2	0.8
850604	1543	20	MAC	F2.2	10.8	29.3	8.46	2.8	0.0	0.0	90.3	0.0	8.5	0.0	0.9	0.5	2.8	2.4	4.7	8.0
850618	1415	20	MAC	F2.0	9.9	29.7	6.98	3.4	0.0	1.7	157.6	0.0	12.6	0.0	1.1	0.0	4.6	0.0	1.1	0.0
850702	1430	20	MAC	F2.0	13.0	28.8	9.65	8.7	2.9	0.4	94.5	0.0	5.0	0.0	109.0	0.0	11.2	0.0	1.2	19.1
850716	1356	20	MAC	F2.2	11.9	29.9	11.36	1.3	0.2	0.4	10.7	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.2	0.2
850729	1935	20	MAC	E3.9	10.5	32.3	8.66	0.6	0.8	0.0	16.9	0.0	0.3	0.0	57.9	2.3	0.8	0.2	10.5	2.5
850813	1530	20	MAC	F3.7	12.0	32.0	10.98	0.0	0.0	0.0	11.7	0.0	0.2	0.0	0.6	0.1	0.4	0.5	3.4	0.0
850827	1858	20	MAC	E3.5	10.1	31.8	4.73	5.1	10.1	0.0	33.8	0.0	0.0	0.0	156.4	11.0	3.4	2.5	1.7	22.0
850327	1150	21	MAC	E2.5	7.5	32.5	8.10	0.5	2.6	0.0	76.3	0.0	1.4	0.0	2.2	1.4	0.1	1.4	2.8	40.6
850409	1417	21	MAC	E0.7	9.6	32.1	9.61	0.6	1.2	0.0	54.5	0.0	2.5	0.0	3.1	0.6	0.6	4.8	17.5	0.8
850508	940	21	MAC	E2.4	8.9	32.2	6.24	40.1	0.6	0.0	87.2	0.0	0.5	0.0	30.1	1.3	1.0	6.7	22.4	2.4
850522	835	21	MAC	E2.1	5.0	32.0	8.01	3.1	0.0	0.0	34.7	0.0	2.0	0.0	0.7	0.1	0.4	2.0	11.6	1.0
850604	1517	21	MAC	F1.9	12.7	29.4	8.39	2.9	0.2	0.0	10.7	0.0	0.2	0.0	1.9	0.0	3.3	0.5	11.0	1.4
850618	1323	21	MAC	F1.5	12.2	28.6	5.98	1.2	0.0	0.2	5.4	0.0	0.2	0.2	1.5	0.0	0.7	0.2	1.5	0.0
850702	1337	21	MAC	F1.4	13.2	29.7	10.19	0.8	0.2	0.0	2.8	0.0	0.1	0.0	5.7	0.2	0.5	0.2	4.0	1.6
850716	1308	21	MAC	F1.8	12.6	30.0	8.61	2.9	0.0	0.1	2.2	0.0	0.0	0.0	3.3	0.0	0.9	0.2	2.7	0.2
850729	1910	21	MAC	E4.0	11.1	31.9	7.90	2.2	2.0	1.8	39.0	0.0	0.1	0.0	7.2	6.8	1.1	0.9	13.5	8.2
850814	830	21	MAC	E1.1	10.1	31.5	9.73	3.1	0.5	0.4	0.7	0.0	0.0	0.0	3.1	1.1	0.1	0.0	18.2	0.2
850827	1838	21	MAC	E3.5	10.5	31.6	3.50	54.9	337.1	1.1	59.4	1.1	0.0	1.1	18.3	5.7	5.7	3.4	1.1	28.6
850109	1601	34	MAC	F4.0	3.7	5.3	8.64	0.1	0.0	0.0	29.2	0.0	5.7	0.0	0.0	0.2	1.4	8.6	0.0	0.0

G.EGG	MYSI	CLAD	ISOP	I.LA	BVAL	CHAE	EUP	CUMA	D.ZO	FISH	P.CO	POLY	E.LA	MEDU	DECA	B.CY	TENA	SIPH	HYDR	CHIT
0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	1.4	0.0	0.0
1.9	0.0	0.0	0.0	0.0	0.0	0.0	19.4	0.0	41.9	0.6	0.0	0.6	0.6	5.2	0.0	4.5	0.0	2.6	0.0	0.0
1.5	0.0	0.0	0.0	0.0	0.0	0.0	12.7	0.0	19.6	0.7	0.0	0.0	8.7	1.1	0.0	3.3	0.0	1.1	0.4	0.0
11.0	0.0	0.0	0.0	0.0	0.0	0.5	14.0	0.0	4.5	0.5	0.0	0.5	3.5	2.0	0.0	0.0	0.0	1.5	1.0	0.0
11.4	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	7.4	0.0	0.0	0.2	0.0	1.0	0.0	0.0	0.0	0.3	0.3	0.0
10.9	0.0	0.0	0.0	0.0	0.0	0.5	8.0	0.0	16.1	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.9	0.1	0.0
5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
14.5	0.0	6.6	0.4	0.0	0.0	0.4	46.8	0.0	6.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0
9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.5	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
174.0	0.0	0.8	0.0	0.0	0.0	0.0	1.8	0.0	1.7	0.0	0.0	0.6	0.3	1.4	0.0	0.1	0.0	0.5	0.0	0.0
8.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.2	0.2	0.6	0.1	0.0	1.0	0.3	0.0	0.0
388.2	0.0	2.5	0.0	0.0	0.0	0.0	18.6	0.0	2.5	0.0	0.0	0.0	1.7	3.4	0.0	0.0	0.0	5.9	1.7	0.0
2.2	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	16.2	0.5	0.0	0.1	0.9	0.7	0.0	5.9	0.0	0.1	0.0	0.0
1.9	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	5.8	0.4	0.0	0.2	3.7	2.7	0.0	3.7	0.0	0.0	0.1	0.0
14.7	0.5	0.0	0.3	0.0	0.0	0.6	18.4	0.0	4.6	0.0	0.0	0.0	0.5	2.6	0.5	0.0	0.0	0.2	0.0	0.0
12.4	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	4.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.1	0.0
31.5	0.0	0.0	0.0	0.7	0.0	0.0	1.9	0.0	6.2	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.2	0.0	0.0
31.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3	0.0	0.0	0.3	0.0	0.3	1.2	0.8	0.0	0.0	0.0	0.0
33.1	0.0	4.4	0.0	0.0	0.0	0.0	1.6	0.0	2.6	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0
58.3	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	2.6	0.0	0.1	0.0	0.0	1.2	0.0	0.1	0.0	0.0	0.0	0.0
706.6	0.0	1.6	0.0	0.0	0.0	0.0	4.1	0.3	5.7	0.0	0.1	0.5	0.4	2.0	0.0	0.1	0.0	0.1	0.0	0.0
63.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.6	0.7	0.0	0.0	0.1	0.0	0.0	0.0
834.3	0.0	2.3	1.1	0.0	0.0	0.0	35.4	0.0	3.4	0.0	0.0	1.1	1.1	2.3	0.0	2.3	0.0	3.4	0.0	1.1
0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	17.8	0.1	0.0	0.0	0.3	0.0	1.9	0.2	0.0	0.0	1.2	0.0	0.0

Table 12. Marine macro net - numbers M^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAU	NEMA	CAL	OST	EGG	TUNI	AMP	GAST	ECTO	BNAU
850109	1533	27	MAC	F3.9	7.6	31.9	9.08	0.0	0.0	0.0	17.3	2.2	0.0	0.1	0.3	4.5	0.1	0.0
850327	1031	27	MAC	E2.9	7.5	32.0	10.82	0.4	3.0	0.4	273.6	3.7	9.2	1.5	2.2	3.0	1.1	57.7
850409	1335	27	MAC	E1.0	9.2	32.1	11.93	0.0	0.7	0.0	146.2	1.0	12.7	0.7	0.0	6.7	10.7	4.0
850508	1037	27	MAC	E2.0	8.8	32.1	8.51	0.0	2.4	0.0	269.8	6.6	104.3	3.3	1.9	8.5	54.5	0.9
850522	805	27	MAC	E2.3	6.0	25.5	7.37	0.0	0.3	0.0	127.8	4.3	3.3	0.5	0.3	3.3	8.7	1.6
850604	1455	27	MAC	F1.6	11.1	30.6	7.92	0.1	0.0	0.0	10.1	0.9	0.3	0.0	5.3	5.3	1.0	1.3
850618	1245	27	MAC	F0.7	10.0	29.9	8.27	0.0	0.0	0.0	41.8	1.1	19.0	0.0	3.0	0.0	0.5	0.0
850702	1314	27	MAC	F1.2	11.5	29.9	11.00	0.4	2.5	0.0	88.7	0.0	124.4	0.7	5.5	0.4	0.4	1.8
850716	1219	27	MAC	F1.5	10.8	31.0	8.22	0.2	0.6	0.1	27.1	0.0	8.2	0.1	1.6	0.2	1.2	3.5
850729	1844	27	MAC	E4.0	10.4	32.8	8.06	0.7	2.9	0.0	149.0	1.7	74.1	6.0	2.9	1.0	1.5	7.1
850814	945	27	MAC	E0.7	11.0	27.0	9.21	0.4	0.1	0.0	4.0	0.2	6.8	0.2	0.5	0.0	5.5	0.7
850827	1810	27	MAC	E3.6	10.3	32.2	4.74	0.2	0.0	0.0	57.2	0.2	71.9	3.6	3.6	0.6	0.2	4.6

G.EG	CLAD	BVAL	CHAE	EUP	CUMA	D.ZO	FISH	POLY	E.LA	MEDU	DECA	B.CY	TENA	SIPH	HYDR
0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.2	0.0	0.1	0.7	0.0	0.0	0.0	1.3	0.0
1.8	0.0	0.0	0.0	45.5	0.0	50.6	1.5	0.4	0.0	0.0	2.2	3.3	0.0	0.4	0.4
0.0	0.0	0.0	0.3	33.9	0.3	11.7	0.3	0.7	7.7	1.3	0.0	3.7	0.0	0.7	0.3
0.9	0.0	0.0	1.9	61.6	0.0	37.1	1.4	0.5	0.5	0.5	0.5	0.0	0.0	1.4	0.0
2.2	0.0	0.0	0.3	2.4	0.0	11.9	0.0	0.8	0.0	0.3	0.0	0.0	0.0	0.3	0.3
0.8	0.0	0.0	0.8	1.0	0.0	37.2	0.3	1.4	1.6	0.6	0.0	0.0	0.0	0.3	0.0
4.1	0.0	0.0	0.0	0.1	0.0	5.1	0.0	0.4	0.1	0.7	1.7	0.1	0.0	0.7	0.2
2.9	1.8	0.0	0.0	23.6	0.0	11.3	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
17.3	1.0	0.1	0.0	1.6	0.0	9.1	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.4	0.0
9.8	0.6	0.0	0.1	13.8	0.0	8.4	0.0	0.7	0.0	4.3	0.1	0.0	0.0	1.0	0.1
12.3	0.1	0.0	0.0	0.1	0.0	1.6	0.0	0.0	0.2	0.7	0.1	0.0	1.0	1.6	0.0
4.6	0.2	0.0	0.0	28.3	0.0	3.2	0.0	0.2	0.0	1.3	0.0	0.2	0.2	1.3	0.0

Table 13. Estuarine micro net - numbers M^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1453	1	MIC	F3.9	3.3	3.7	0.85	7.1	47.1	0.0	10.6	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0
850109	1337	7	MIC	F3.7	3.2	1.4	0.69	29.0	72.5	0.0	18.8	0.0	0.0	1.4	2.9	0.0	0.0	2.9	13.0	0.0
850327	902	7	MIC	E3.4	3.7	1.4	0.74	16.2	23.0	0.0	13.5	0.0	0.0	0.0	1.4	0.0	0.0	0.0	16.2	0.0
850409	1735	7	MIC	F1.9	7.3	1.0	0.79	5.1	97.5	0.0	108.9	0.0	10.1	0.0	64.6	2.5	0.0	0.0	3.8	0.0
850508	835	7	MIC	E2.9	8.5	3.0	0.80	0.0	25.0	0.0	12.5	0.0	0.0	1.3	18.8	0.0	0.0	0.0	0.0	0.0
850522	745	7	MIC	E2.4	10.0	4.0	0.81	4.9	35.8	0.0	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.5
850604	1618	7	MIC	F2.7	12.0	0.6	0.61	6.6	175.4	0.0	52.5	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	14.8
850618	1555	7	MIC	F2.8	14.7	0.5	1.06	7.5	33.0	0.9	15.1	0.0	0.0	0.0	1.9	0.0	1.9	0.0	0.9	1.9
850702	1517	7	MIC	F2.5	15.7	0.8	0.80	22.5	123.8	6.3	95.0	0.0	0.0	0.0	7.5	0.0	1.3	0.0	0.0	11.3
850716	1516	7	MIC	F2.9	16.1	0.2	1.11	4.5	11.7	0.0	2.7	0.0	0.0	0.0	3.6	0.0	0.9	0.9	0.9	4.5
850730	1520	7	MIC	F3.6	16.6	1.4	0.97	9.3	63.9	3.1	37.1	0.0	0.0	0.0	4.1	0.0	0.0	1.0	2.1	11.3
850813	1330	7	MIC	F2.7	16.9	0.8	0.92	10.9	15.2	8.7	3.3	0.0	0.0	0.0	0.0	1.1	1.1	0.0	1.1	6.5
850828	1453	7	MIC	F3.8	16.3	3.2	0.44	43.2	131.8	18.2	20.5	0.0	0.0	2.3	4.5	0.0	0.0	4.5	2.3	18.2
850109	1355	15	MIC	F3.8	3.4	2.7	0.83	13.3	57.8	0.0	33.7	1.2	0.0	0.0	4.8	0.0	0.0	0.0	10.8	0.0
850327	917	15	MIC	E3.3	4.3	3.9	0.84	6.0	182.1	0.0	54.8	0.0	0.0	0.0	338.1	33.3	4.8	0.0	4.8	29.8
850409	1801	15	MIC	F2.2	8.4	1.2	0.85	7.1	64.7	0.0	71.8	0.0	1.2	0.0	34.1	0.0	1.2	1.2	14.1	9.4
850508	854	15	MIC	E2.8	8.3	7.1	0.80	28.8	102.5	0.0	146.3	0.0	0.0	0.0	35.0	2.5	2.5	0.0	8.8	2.5
850522	730	15	MIC	E2.5	10.0	6.0	0.80	8.8	52.5	0.0	22.5	0.0	6.3	0.0	61.3	0.0	1.3	7.5	15.0	2.5
850604	1605	15	MIC	F2.6	12.5	1.9	0.91	17.6	505.5	0.0	197.8	0.0	4.4	0.0	48.4	17.6	4.4	0.0	4.4	118.7
850618	1540	15	MIC	F2.6	15.0	0.8	0.95	8.4	43.2	8.4	35.8	0.0	5.3	0.0	11.6	0.0	17.9	1.1	3.2	12.6
850702	1630	15	MIC	F3.3	-	-	0.99	8.1	2092.9	0.0	1713.1	0.0	4.0	0.0	84.8	8.1	0.0	113.1	149.5	290.9
850716	1601	15	MIC	F3.2	16.3	1.3	1.10	1.8	32.7	3.6	20.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9	2.7
850729	1500	15	MIC	F3.4	15.5	4.3	0.82	34.1	961.0	29.3	658.5	0.0	0.0	4.9	14.6	43.9	0.0	19.5	97.6	122.0
850813	1420	15	MIC	F3.1	16.2	1.3	0.91	2.2	69.2	6.6	61.5	0.0	2.2	1.1	1.1	0.0	0.0	0.0	11.0	86.8
850827	1920	15	MIC	E3.4	15.0	5.2	0.42	73.8	1300.0	0.0	809.5	21.4	2.4	2.4	166.7	192.9	0.0	64.3	28.6	259.5
850109	1420	371	MIC	F3.8	3.2	3.0	0.88	2.3	26.1	0.0	9.1	0.0	0.0	0.0	0.0	0.0	1.1	0.0	5.7	0.0
850109	1433	372	MIC	F3.8	7.3	30.8	0.72	29.2	173.6	0.0	473.6	0.0	0.0	0.0	19.4	6.9	0.0	9.7	18.1	0.0

G.EG	CLAD	ISOP	I.LA	BVAL	CHAE	EUP	D.ZO	POLY	E.LA	DECA	B.CY	INSC
0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.9	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	0.0	1.2	0.0	0.0	0.0
1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	66.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.0	0.0
0.9	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	46.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	5.4	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
9.1	22.7	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	1.2	4.8	0.0	1.2	0.0
2.4	0.0	0.0	0.0	0.0	0.0	1.2	2.4	0.0	0.0	0.0	2.4	0.0
1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	1.3	0.0	0.0
0.0	8.8	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0
0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
4.0	80.8	0.0	0.0	0.0	0.0	8.1	4.0	8.1	0.0	0.0	0.0	0.0
0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.8	48.8	0.0	0.0	34.1	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0
0.0	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69.0	16.7	7.1	0.0	33.3	2.4	9.5	0.0	42.9	0.0	0.0	2.4	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 14. Transition micro net - numbers M^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1626	20	MIC	F4.1	7.5	31.5	0.77	59.7	70.1	0.0	666.2	1.3	9.1	0.0	20.8	1.3	0.0	18.2	315.6	0.0
850327	1445	20	MIC	E1.5	7.5	32.3	0.62	32.3	1322.6	0.0	896.8	0.0	0.0	0.0	2877.4	283.9	0.0	6.5	71.0	716.1
850409	1357	20	MIC	E0.8	8.3	32.2	1.10	10.9	1054.5	0.0	792.7	7.3	3.6	0.0	4047.3	47.3	0.0	40.0	87.3	363.6
850508	1010	20	MIC	E2.1	8.8	32.0	0.80	25.0	1300.0	0.0	760.0	10.0	5.0	5.0	2675.0	135.0	0.0	30.0	65.0	765.0
850522	859	20	MIC	E1.9	9.0	29.5	0.87	32.2	698.9	0.0	466.7	0.0	4.6	0.0	1089.7	50.6	0.0	4.6	50.6	855.2
850604	1543	20	MIC	F2.2	10.8	29.3	0.85	84.7	2776.5	0.0	2155.3	0.0	0.0	0.0	1647.1	338.8	9.4	37.6	56.5	630.6
850618	1415	20	MIC	F2.0	9.9	29.7	0.70	80.0	708.6	11.4	888.6	0.0	22.9	0.0	840.0	51.4	11.4	11.4	22.9	211.4
850702	1430	20	MIC	F2.0	13.0	28.8	0.97	181.4	4230.9	8.2	5030.9	0.0	0.0	0.0	651.5	230.9	8.2	272.2	296.9	478.4
850716	1356	20	MIC	F2.2	11.9	29.9	1.14	14.0	204.4	1.8	564.0	0.0	1.8	1.8	8.8	0.0	0.0	13.2	20.2	53.5
850729	1935	20	MIC	E3.9	10.5	32.2	0.87	133.3	4864.4	36.8	2800.0	18.4	0.0	9.2	827.6	1544.8	9.2	220.7	220.7	432.2
850813	1530	20	MIC	F3.7	12.0	32.0	1.10	25.5	712.7	7.3	1029.1	3.6	0.0	0.0	50.9	192.7	7.3	65.5	167.3	323.6
850827	1858	20	MIC	E3.5	10.1	31.8	0.47	144.7	2510.6	17.0	1574.5	17.0	0.0	0.0	902.1	808.5	8.5	229.8	51.1	297.9
850327	1150	21	MIC	E2.5	7.5	32.5	0.81	39.5	1427.2	0.0	582.7	4.9	4.9	0.0	3056.8	266.7	4.9	14.8	49.4	2464.2
850409	1417	21	MIC	E0.7	9.6	32.1	0.96	29.2	400.0	0.0	437.5	0.0	0.0	0.0	2737.5	12.5	0.0	16.7	83.3	391.7
850508	940	21	MIC	E2.4	8.9	32.2	0.62	109.7	1283.9	0.0	658.1	0.0	0.0	0.0	3741.9	116.1	0.0	51.6	71.0	600.0
850522	835	21	MIC	E2.1	5.0	32.0	0.80	36.3	157.5	0.0	101.3	0.0	1.3	0.0	360.0	11.3	3.8	8.8	5.0	110.0
850604	1517	21	MIC	F1.9	12.7	29.4	0.84	123.8	1590.5	0.0	738.1	4.8	19.0	0.0	1023.8	542.9	0.0	9.5	38.1	357.1
850618	1323	21	MIC	F1.5	12.2	28.6	0.60	126.7	516.7	3.3	273.3	0.0	0.0	0.0	983.3	10.0	26.7	13.3	6.7	86.7
850702	1337	21	MIC	F1.4	13.2	29.7	1.02	117.6	3717.6	7.8	3247.1	15.7	0.0	0.0	462.7	196.1	0.0	141.2	251.0	156.9
850716	1308	21	MIC	F1.8	12.6	30.0	0.86	143.0	781.4	4.7	682.6	0.0	4.7	0.0	55.8	50.0	2.3	240.7	55.8	320.9
850729	1910	21	MIC	E4.0	11.1	31.9	0.79	101.3	5174.7	25.3	2754.4	0.0	0.0	0.0	202.5	1807.6	0.0	0.0	121.5	268.4
850814	830	21	MIC	E1.1	10.1	31.5	0.97	132.0	1995.9	0.0	1435.1	0.0	0.0	0.0	82.5	346.4	0.0	115.5	156.7	99.0
850827	1838	21	MIC	E3.5	10.5	31.6	0.35	560.0	5645.7	34.3	5074.3	57.1	0.0	0.0	1085.7	1897.1	0.0	537.1	194.3	1108.6
850109	1601	34	MIC	F4.0	3.7	5.3	0.86	17.4	98.8	0.0	446.5	0.0	0.0	0.0	4.7	0.0	1.2	1.2	155.8	0.0

G.EGG	CLAD	ISOP	I.LA	BVALV	CHAE	EUP	CUMA	D.ZO	POLY	E.LAR	MEDU	B.CY	SIPH	HYDR
2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
6.5	0.0	0.0	0.0	0.0	0.0	6.5	0.0	38.7	25.8	116.1	12.9	12.9	6.5	1.6
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	47.3	0.0	65.5	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	70.0	5.0	0.0	0.0	0.0
9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	18.4	9.2	0.0	4.6	0.0
28.2	9.4	0.0	18.8	0.0	0.0	9.4	0.0	9.4	0.0	18.8	0.0	9.4	0.0	0.0
11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16.5	8.2	0.0	0.0	0.0	8.2	123.7	0.0	8.2	8.2	33.0	0.0	0.0	0.0	0.0
14.0	0.9	0.0	0.0	7.0	0.0	0.0	0.0	6.1	0.9	0.0	0.9	0.0	0.0	0.0
496.6	18.4	0.0	0.0	156.3	0.0	0.0	0.0	0.0	64.4	46.0	27.6	9.2	0.0	0.0
25.5	0.0	0.0	0.0	36.4	0.0	0.0	0.0	0.0	25.5	18.2	0.0	0.0	0.9	0.0
238.3	34.0	8.5	0.0	102.1	0.0	8.5	0.0	0.0	68.1	25.5	34.0	8.5	0.0	0.0
4.9	0.0	0.0	0.0	0.0	4.9	44.4	0.0	14.8	0.0	84.0	4.9	14.8	0.0	0.0
4.2	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	4.2	33.3	4.2	33.3	0.0	0.0
25.8	0.0	0.0	0.0	0.0	0.0	19.4	0.0	6.5	0.0	0.0	12.9	0.0	0.0	0.0
7.5	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0
38.1	0.0	0.0	0.0	0.0	4.8	9.5	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0
26.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	16.7	0.0	0.0
54.9	23.5	0.0	0.0	0.0	0.0	0.0	0.0	7.8	7.8	203.9	0.0	0.0	0.0	0.0
70.9	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0
486.1	10.1	5.1	0.0	0.0	0.0	0.0	0.0	0.0	253.2	45.6	0.0	0.0	0.0	0.0
107.2	0.0	0.0	0.0	66.0	0.0	0.0	0.0	0.0	33.0	0.0	0.0	8.2	0.0	0.0
811.4	34.3	80.0	0.0	160.0	0.0	22.9	0.0	22.9	445.7	80.0	0.0	11.4	0.0	0.0
1.2	1.2	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 15. Marine micro net - numbers M^{-3}.

DATE	TIME	STN	STYPE	TIDE	TEMP	SAL	VOL	HARP	CNAUP	NEMA	CAL	WORM	OST	ACAR	EGG	TUNI	AMP	GAST	ECTO	BNAUP
850109	1533	27	MIC	F3.9	7.6	31.9	0.91	12.1	183.5	0.0	1084.6	0.0	9.9	0.0	20.9	1.1	0.0	12.1	293.4	0.0
850327	1031	27	MIC	E2.9	7.5	32.0	1.08	96.3	1340.7	0.0	977.8	7.4	33.3	3.7	2437.0	111.1	0.0	37.0	66.7	244.4
850409	1335	27	MIC	E1.0	9.2	32.1	1.19	13.4	685.7	0.0	860.5	0.0	10.1	0.0	1946.2	20.2	0.0	20.2	37.0	67.2
850508	1037	27	MIC	E2.0	8.8	32.1	0.85	0.0	3058.8	0.0	2023.5	18.8	9.4	0.0	5167.1	282.4	94.1	28.2	150.6	348.2
850522	805	27	MIC	E2.3	6.0	25.5	0.74	10.8	962.2	0.0	573.0	0.0	0.0	0.0	864.9	16.2	0.0	21.6	10.8	308.1
850604	1455	27	MIC	F1.6	11.1	30.6	0.79	30.4	5630.4	0.0	2157.0	10.1	0.0	0.0	1275.9	384.8	0.0	0.0	50.6	192.4
850618	1245	27	MIC	F0.7	10.0	29.9	0.83	28.9	1142.2	0.0	1074.7	0.0	4.8	0.0	1233.7	0.0	9.6	38.6	4.8	134.9
850702	1314	27	MIC	F1.2	11.5	29.9	1.10	36.4	3934.5	7.3	6632.7	0.0	7.3	0.0	1040.0	160.0	7.3	116.4	320.0	167.3
850716	1219	27	MIC	F1.5	10.8	31.0	0.82	19.5	3536.6	0.0	3604.9	0.0	0.0	4.9	112.2	307.3	0.0	243.9	29.3	336.6
850729	1844	27	MIC	E4.0	10.4	32.8	0.81	69.1	7140.7	19.8	4642.0	19.8	0.0	0.0	563.0	2390.1	0.0	0.0	108.6	150.6
850814	945	27	MIC	E0.7	11.0	27.0	0.92	104.3	2200.0	0.0	2887.0	4.3	0.0	0.0	30.4	130.4	4.3	65.2	243.5	360.9
850827	1810	27	MIC	E3.6	10.3	32.2	0.47	14.9	1306.4	6.4	1202.1	4.3	0.0	2.1	112.8	487.2	0.0	17.0	27.7	89.4

G.EG	CLAD	BVAL	CHAE	EUP	D.ZO	FISH	POLY	E.LA	MEDU	B.CYP	SIPH
0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	1.1
0.0	0.0	0.0	0.0	55.6	44.4	0.0	25.9	11.1	0.0	11.1	0.0
0.0	0.0	0.0	0.0	40.3	6.7	0.0	6.7	53.8	3.4	238.7	3.4
0.0	0.0	0.0	9.4	84.7	18.8	0.0	0.0	28.2	0.0	0.0	9.4
0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0
10.1	0.0	0.0	1.3	0.0	10.1	0.0	0.0	20.3	10.1	0.0	0.0
14.5	0.0	0.0	1.2	0.0	4.8	0.0	1.2	0.0	0.0	0.0	2.4
14.5	7.3	0.0	0.0	72.7	14.5	0.0	14.5	50.9	0.0	0.0	0.0
43.9	29.3	48.8	0.0	0.0	4.9	0.0	39.0	0.0	4.9	0.0	0.0
39.5	0.0	79.0	9.9	39.5	9.9	0.0	148.1	39.5	69.1	0.0	0.0
34.8	0.0	47.8	0.0	0.0	0.0	0.0	34.8	21.7	8.7	0.0	0.0
2.1	2.1	0.0	0.0	53.2	4.3	0.0	38.3	4.3	4.3	0.0	0.0

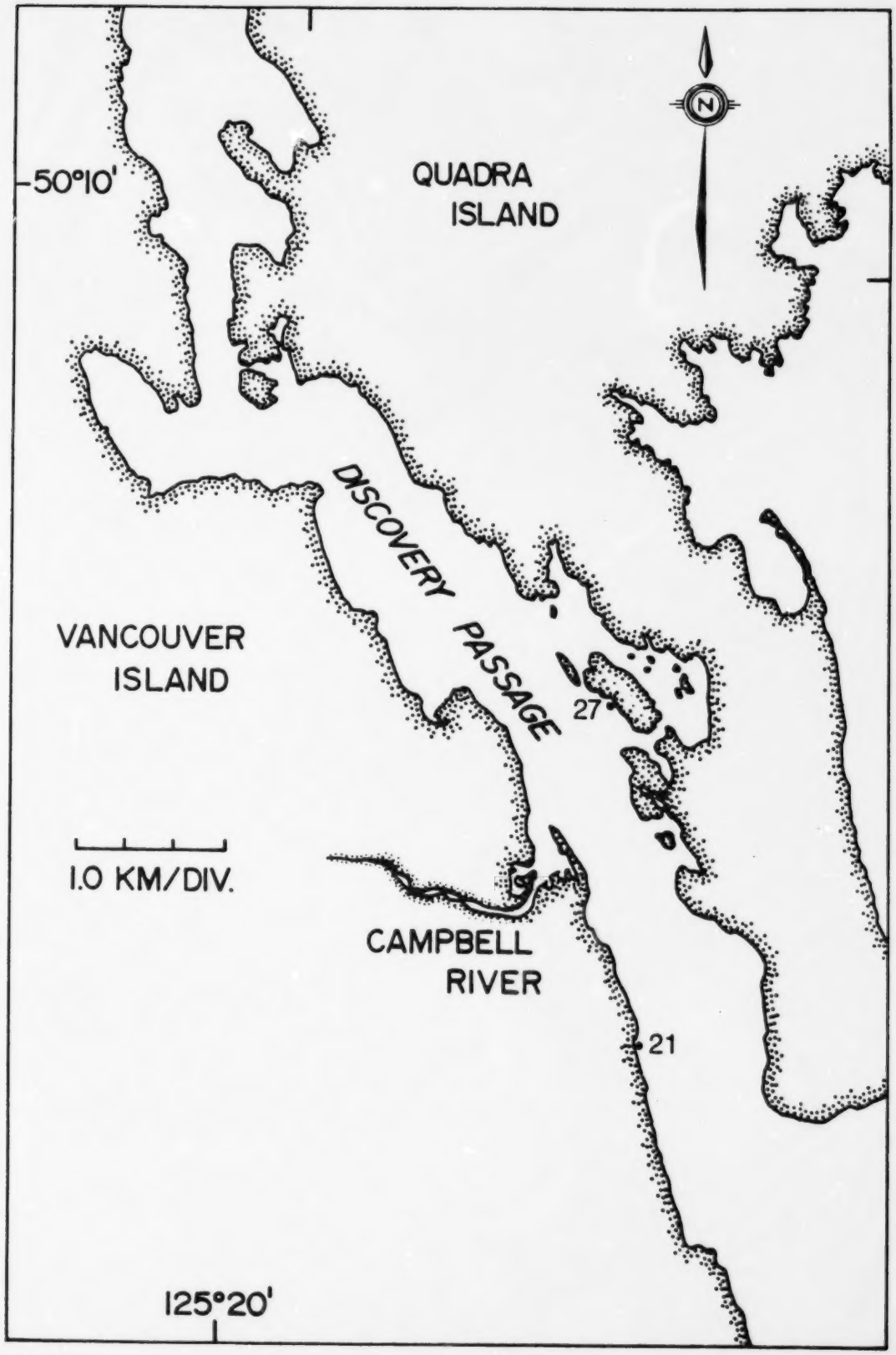

Figure 1. Station locations in Discovery Passage

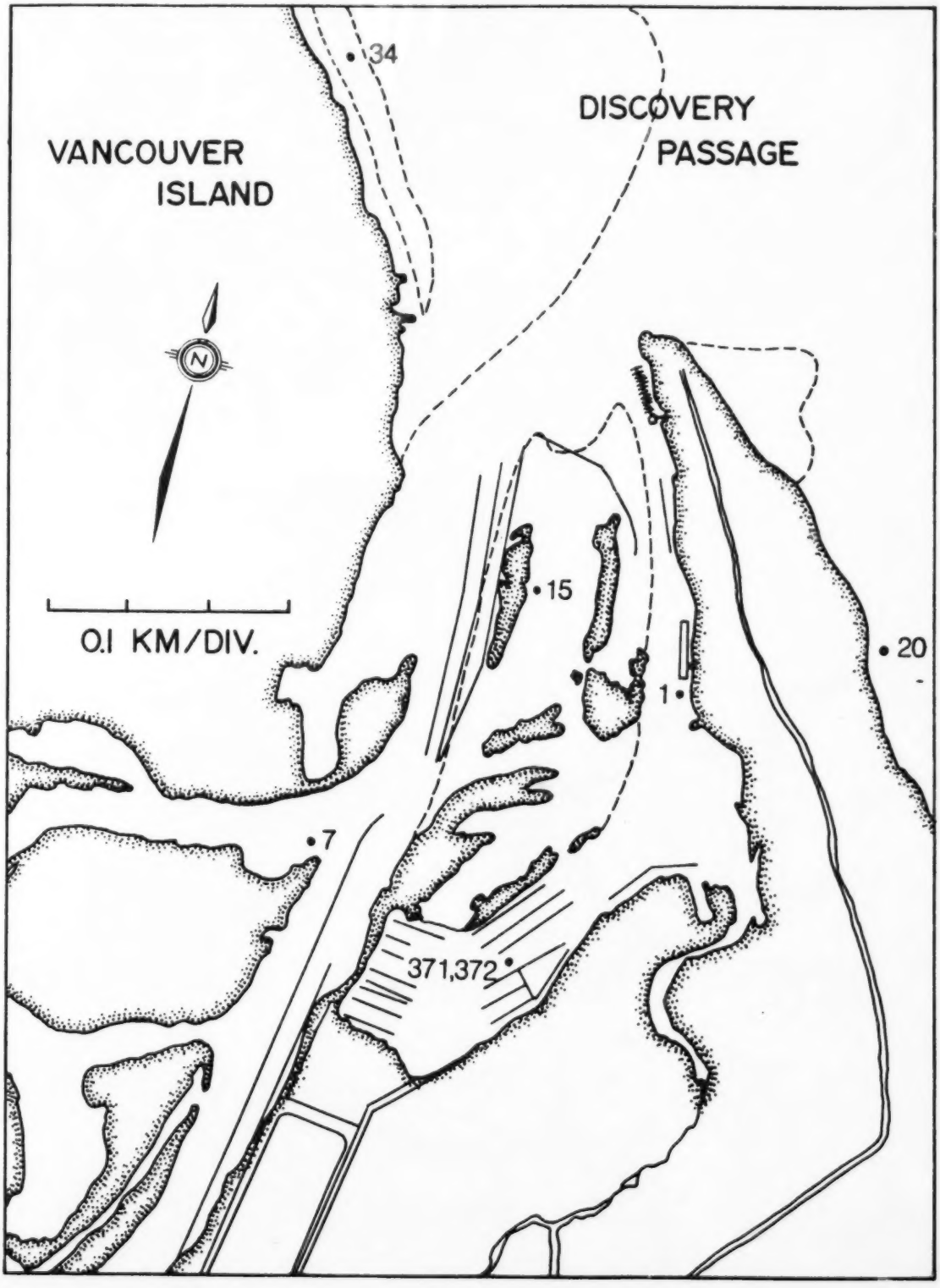

Figure 2. Station locations in Campbell River Estuary and adjacent waters